

Trends In Diabetes Prevalence and Care Among Medicare Beneficiaries In Maryland — 2002

Statement of the Problem

Diabetes, a chronic medical condition that can lead to serious complications, including blindness, lower-limb amputations, cardiovascular disease, and kidney disease, is the sixth leading cause of death in the United States. In 2002, diabetes-related health expenditures nationwide totaled \$132 billion.¹ Rates of diabetes have increased significantly across the country since the 1950s.

Public health efforts focus on preventing diabetes as well as increasing the use of routine screening tests for people with the disease. Routine preventive care — such as blood glucose monitoring for glycemic control and dilated eye examinations — may prevent or delay adverse outcomes of the disease.

The Maryland Health Care Commission (MHCC) and Maryland Department of Health and Mental Hygiene (DHMH) commissioned this study to determine rates of diabetes prevalence, use of selected preventive services, and adverse outcomes associated with diabetes among the state's

Medicare beneficiaries in 2002. DHMH and the newly formed Maryland Diabetes Prevention and Control Coalition plan to use the study's findings to identify priorities and targets for diabetes prevention and control efforts, as well as to monitor the progress of these efforts.

The analysis suggests that diabetes is a growing problem for Medicare beneficiaries in Maryland. Although beneficiaries' use of several preventive services is on an upward trend, those in certain groups — such as African Americans and individuals dually enrolled in Medicare and Medicaid — have higher rates of disease, experience more adverse outcomes, and receive fewer preventive services.

Findings in Brief

Diabetes is growing more prevalent among the state's Medicare beneficiaries.

In 2002, nearly 17 percent (just under 97,000) of fee-for-service (FFS) Medicare beneficiaries in Maryland had diabetes, as identified by use of diabetes services in the Medicare claims data. This estimate

represents an increase from 14 percent in 1997.² This trend is consistent with national trends in prevalence.³

The prevalence of diabetes varied across demographic groups. Rates were noticeably higher among African Americans and those dually enrolled in Medicare and Medicaid (Table 1).⁴ For example, 23 percent of African Americans had diabetes in 2002, compared to 15 percent of whites. Although prevalence rates were similar among non-elderly disabled and aged beneficiaries (results not shown), beneficiaries aged 55 to 64 also had high rates of diabetes (25 percent). However, this group accounted for only 7 percent of diabetic beneficiaries.

The prevalence of diabetes varied significantly across Maryland's 24 political jurisdictions (23 counties and Baltimore City — not shown). Diabetes prevalence rates were 20 percent or higher in seven counties, and under 15 percent in three counties. The rates ranged from a high of 21 percent in Allegany, Dorchester, and Somerset counties to a low of 13 percent in Montgomery County. Variations likely reflect county-by-county differences in racial and other demographic characteristics. Counties with lower per capita income generally had the highest rates of diabetes.

Relatively few beneficiaries experience adverse outcomes, but there are notable disparities among beneficiaries with diabetes.

Figure 1 illustrates adverse outcomes among beneficiaries with diabetes. The most common complication, end-stage renal disease (ESRD), occurred among three percent of beneficiaries with diabetes. Although lower-limb amputations occurred among about one percent, a decrease from previous estimates, the

Table 1
Diabetes prevalence and distribution of beneficiaries with diabetes, 2002

	Percent with Diabetes	Distribution of Beneficiaries with Diabetes
White	15	70
African American	23	27
Hispanic	18	<1
Asian	19	1
Other	15	1
Medicaid	24	18
Not Medicaid	16	82

Note: Prevalence rate is age-sex adjusted rate per 100 beneficiaries.

2 Diabetes Among Maryland Medicare Beneficiaries

Healthy People 2010 target is much lower, at 0.18 percent.⁵

Hospitalization for other long-term complications of diabetes — such as cardiovascular or renal conditions — was the most frequent type of hospitalization among those studied.⁶ Hospitalization for short-term complications (such as keto-acidosis) and for uncontrolled diabetes (including severe hyperglycemia) occurred among less than one half percent of beneficiaries with diabetes.

For all adverse outcomes examined, African Americans and Medicaid enrollees had higher rates than their counterparts (Figures 2 and 3). For example, African Americans had rates of ESRD that were nearly three times higher than those for whites.

Beneficiaries qualifying for Medicare as nonelderly disabled also had much higher rates of adverse outcomes (not shown). For example, 4.8 percent of the nonelderly disabled had a hospitalization for long-term complications of diabetes, compared to 1.8 percent of aged beneficiaries.⁷

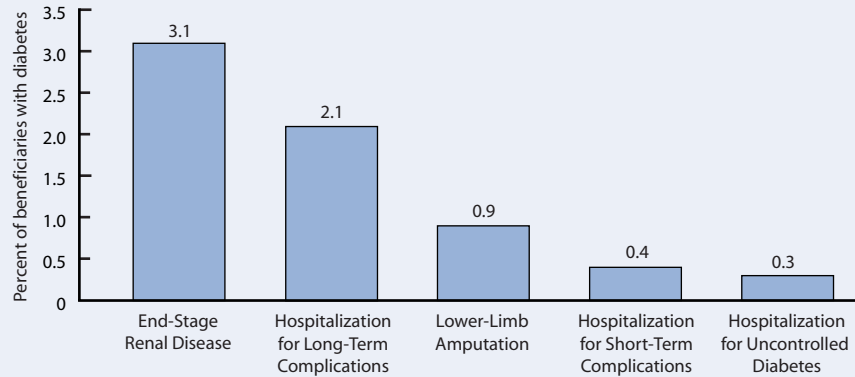
The percent of beneficiaries with diabetes who experienced adverse outcomes varied widely by county (not shown). For example, the rate of lower-limb amputation ranged from a low of 0.6 percent to a high of 1.8 percent. County differences can be driven by a number of factors, such as demographic makeup, access to care, and physician practice patterns. Only one jurisdiction (Baltimore City) was consistently in the top third for rates of adverse outcomes across all the measures.

Use of most preventive services is increasing.

For Maryland Medicare beneficiaries with diabetes, rates of use are increasing for all preventive services except dilated eye examinations (Figure 4). In 2002, the rate of HbA1c testing for blood glucose monitoring — 81 percent — surpassed the Healthy People 2010 goal of 50 percent. However, the rate of eye exams — 51 percent — fell short of the Healthy People 2010 goal of 75 percent. Dilated eye exam rates also decreased when compared to previous estimates in Maryland; this trend is consistent with a nationwide decrease in this measure.⁸

Figure 1

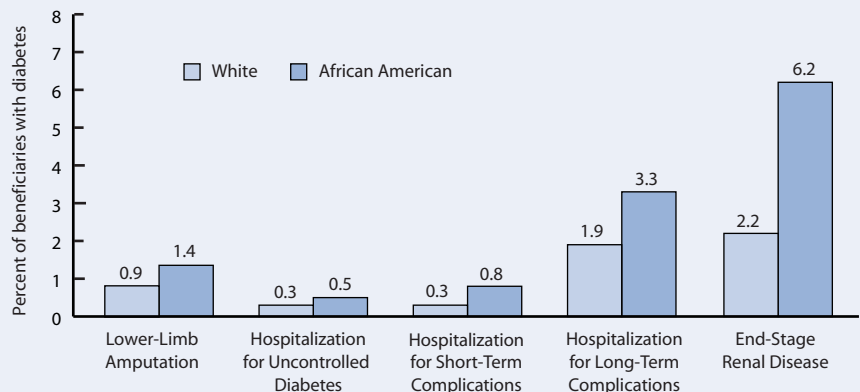
Adverse outcomes among beneficiaries with diabetes, 2002



Note: Rate per 100 beneficiaries with diabetes.

Figure 2

Adverse outcomes among beneficiaries with diabetes, by race, 2002



Note: Age-sex adjusted rate per 100 beneficiaries with diabetes.

Table 2

Preventive service use among beneficiaries with diabetes, by race, 2002

	HbA1c Test	Dilated Eye Exam	Lipid Profile	Influenza Vaccination	Pneumococcal Vaccination	Micro-albuminuria Test
White	82	52	70	54	7	20
African American	75	45	61	38	5	18
Hispanic	81	47	71	45	4	21
Asian	81	45	71	57	7	21
Other	79	49	71	53	7	18

Note: Age-sex adjusted rate per 100 beneficiaries with diabetes.

Fifty-three percent of beneficiaries received the recommended vaccinations for influenza, and seven percent received those for pneumonia (not shown); this latter vaccination is recommended once for those age 65 or older.⁹

African Americans, Medicaid enrollees, and the nonelderly disabled use fewer preventive services.

African Americans had consistently lower rates of preventive service use than whites (Table 2). For example, rates of dilated eye exams and lipid profiles were 14 percent lower among African Americans; rates of influenza vaccination were 30 percent lower. Similarly, beneficiaries dually enrolled in Medicaid had lower rates for all preventive services than non-Medicaid enrollees (Figure 5). Rates for all tests except HbA1c monitoring were at least 20 percent lower among Medicaid enrollees than non-Medicaid enrollees. The non-elderly disabled also had lower rates of testing compared to aged beneficiaries (Table 3).

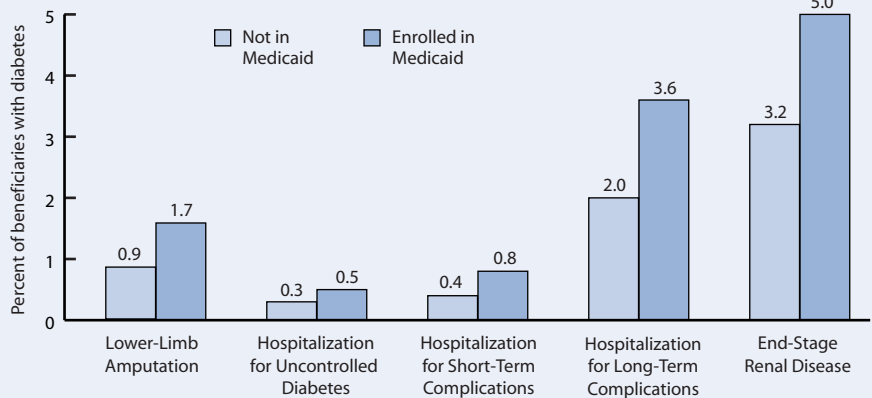
Rates of preventive services also varied by county (not shown). For example, the proportion of beneficiaries with diabetes who received an HbA1c test in 2002 ranged from 74 percent in Prince George's County to 88 percent in Garrett County, while the proportion who received a dilated eye exam ranged from 30 percent in Caroline County to 61 percent in Worcester County. As with complication rates, there was no consistent pattern across counties for the different measures.

Implications for Action

This brief highlights increasing rates of diabetes prevalence among Maryland's Medicare beneficiaries. Whether this rise is attributable to an absolute increase in prevalence of the disease or increased screening to identify new cases is uncertain. In any event, the importance of preventive interventions to reduce the prevalence of risk factors for diabetes—such as obesity and physical inactivity—is clear. Use of preventive tests is increasing, with the exception of dilated eye exams, which remain well below the Healthy People 2010 target. Diabetes imposes a disproportionate burden on certain groups in Maryland. African

Figure 3

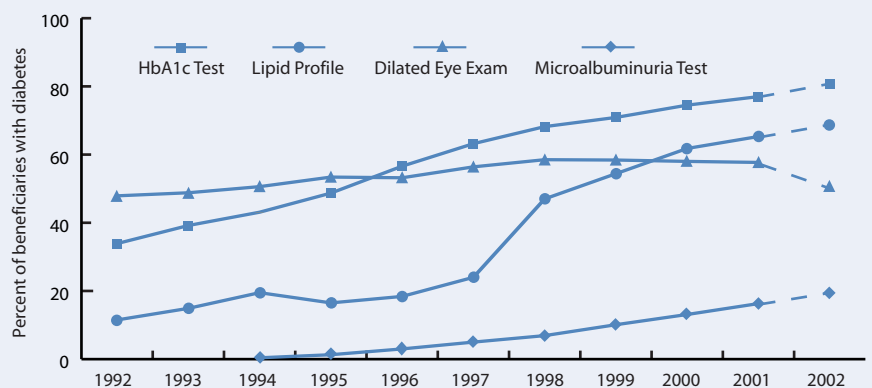
Adverse outcomes among beneficiaries with diabetes, by Medicaid enrollment, 2002



Note: Age-sex adjusted rate per 100 beneficiaries with diabetes. Medicaid enrollment indicates at a minimum the state Medicaid program pays for the beneficiary's Medicare premiums, co-pays, and deductibles.

Figure 4

Trends in preventive use among beneficiaries with diabetes in Maryland, 2002



Source: 1992–2001 data (solid line) are from the Medicare Quality Monitoring System (MQMS) data from the Centers for Medicare and Medicaid Services (CMS). MQMS rates are adjusted to the July 1999 national distribution of Medicare enrollees.

Note: 2002 data (dotted line) present rate per 100 beneficiaries with diabetes.

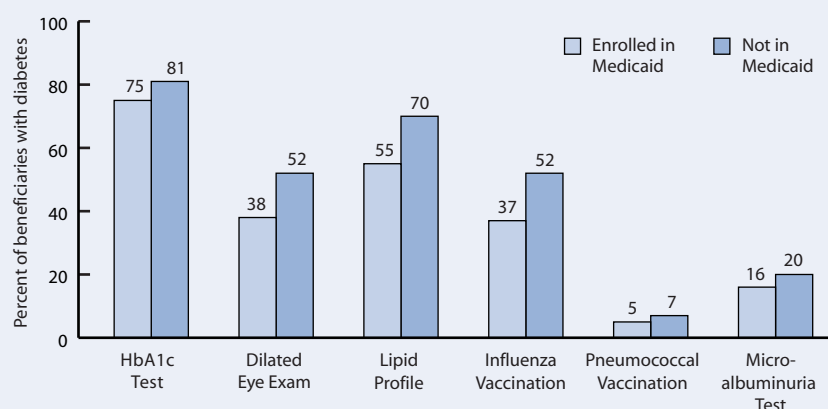
Table 3

Preventive service use by beneficiaries with diabetes, by type of Medicare, 2002

	HbA1c Test	Dilated Eye Exam	Lipid Profile	Influenza Vaccination
Aged	81	53	70	52
Nonelderly disabled	74	37	62	37

Note: Sex adjusted rate per 100 beneficiaries with diabetes.

Figure 5

Preventive service use by beneficiaries, by Medicaid enrollment, 2002

Note: Age-sex adjusted rate per 100 beneficiaries with diabetes.

Americans and the dually enrolled are more likely to have diabetes. These groups, as well as the nonelderly disabled, also use

Study Design

All data were obtained by MHCC from the Centers for Medicare & Medicaid Services (CMS) under a data use agreement. Data sources included the 2002 Maryland Denominator file; MedPAR inpatient and skilled nursing facility, outpatient, home health, and hospice claims for Maryland residents and physician claims from the Maryland Medical Care Database. Beneficiaries with diabetes were defined as those having at least one acute care claim, or two nonacute care face-to-face claims (such as a physician visit) at least seven days apart, with a diabetes diagnosis.¹⁰ The analysis excluded beneficiaries who were in one or more of the following categories: (1) not enrolled in Medicare in January 2002; (2) enrolled in managed care; and (3) not enrolled in both Parts A and B FFS Medicare for all months in which they were in Medicare during the year.¹¹ Rates by subgroup were adjusted to reflect the statewide age and sex distribution of Medicare beneficiaries in 2002.¹²

fewer preventive services and experience a higher level of adverse outcomes than other beneficiaries. These patterns deserve attention by state policymakers, managed care organizations, and other health care providers.

The data in this report provide key baseline information to DHMH, the Maryland Diabetes Prevention and Control Coalition, and other key stakeholders and policymakers. These organizations and their partners can utilize the study's findings to plan, implement, and evaluate activities to increase the provision of preventive services to Medicare beneficiaries with diabetes. The data will be updated periodically to document progress toward medical care quality improvement goals for this population in Maryland.

About this Project

Support for this project was made possible through funding from the MHCC and from the Maryland Department of Health and Mental Hygiene's diabetes prevention and control cooperative agreement with the Centers for Disease Control and Prevention (CDC). The cooperative agreement number is U32/CCU322703-01. The project was administered by MHCC.

Notes

¹ American Diabetes Association. "Economic Costs of Diabetes in the U.S. in 2002." *Diabetes Care*, vol. 26, 2003.

² Maryland Health Care Commission. "A Profile of Clinical Preventive Services Provided to Maryland Medicare Beneficiaries with Diabetes: Focus on HbA1c and Eye Exam." *Extramural Report Series*, 2000.

³ See www.cdc.gov/diabetes/index.htm.

⁴ The Medicare data do not record true dual enrollment status but only whether the state Medicaid program pays a beneficiary's Medicare premiums, co-pays, and deductibles. The payment of these Medicare expenses by Medicaid does not always translate into full Medicaid coverage, but it is a reasonably accurate indicator of poverty.

⁵ Healthy People 2010 objectives are the consensus health goals for the nation. See www.healthypeople.gov.

⁶ These measures are based on hospitalizations with primary diagnoses of diabetes (ICD-9-CM 250) with fourth- and fifth-digit codes indicating specific diabetic complications.

⁷ Nonelderly disabled beneficiaries include beneficiaries with a Medicare eligibility status of disabled, with and without ESRD, as well as a small group of beneficiaries qualifying as ESRD-only.

⁸ See www.cdc.gov/diabetes/statistics/index.htm.

⁹ People age 65 years and older who have been vaccinated should be revaccinated if they received the vaccine five or more years ago and were under 65 years old at the time.

¹⁰ ICD-9-CM 250, 357.2, 362.0, and 366.41.

¹¹ Excluding beneficiaries who enrolled in Medicare after January removed two percent from the cohort of beneficiaries with diabetes. Fewer than eight percent of beneficiaries died during the year; their average enrollment was eight months.

¹² Rates were adjusted using direct standardization to the statewide age-sex distribution. Age and Medicare status (disabled and aged) were adjusted only for sex; sex was adjusted only for age.